ABSTRACT OF THE DISCLOSURE

In a BAYER circuit, a process for controlling precipitation in which particle size quality of alumina hydrate produced in the circuit and circulating in feed tanks is monitored utilizing a calibration step and a control step. In the calibration step, cumulative percentage of alumina hydrate particles circulating in the feed tanks in the circuit that are finer than X2 μm, defined as CPFT X2, is measured vs. time and cumulative percentage of alumina hydrate particles circulating in the feed tanks in the circuit that are finer than X1 μm, defined as CPFT X1 vs. time, is measured, where X1 and X2 are predetermined particles sizes and X1 is smaller than X2. A relationship R between CPFT X1 and later changes in CPFT X2, is determined and upper and lower trigger thresholds of CPFT X1 which correspond to maximum permissible variations in CPFT X2 are defined. In the control step, CPFT X1 and CPFT X2 are regularly measured, and R and the correlation between CPFT X2 and the particle size of hydrate produced are updated. Corrective action is taken at the beginning of precipitation when the measured value of CPFT X1 reaches one of the trigger thresholds.

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